

**AMENDMENTS TO THE SPECIFICATION**

Page 1, after the title insert the following:

This application is the US national phase of international application  
**PCT/JP03/05173** filed **23 April 2003** which designated the U.S. and claims benefit of  
**JP 2002-121246**, dated **23 April 2002**, the entire content of which is hereby  
incorporated by reference.

**Please amend the paragraph beginning at page 17, line 21, as follows:**

A twenty-ninth invention provides a method for producing a film ~~(P-2-1)~~ (P-2)  
according to the twenty-eighth invention, wherein the amounts of the polyvalent metal  
compound (B) and the volatile base (C) are at least 0.2 eq and at least 1.0 eq,  
respectively, on the basis of the amount of all the carboxyl groups contained in the  
poly(carboxylic acid) polymer (A), to thereby produce a film (P-2-1) as recited in the  
twenty-third invention.

**Please amend the paragraph beginning at page 19, line 10, as follows:**

A thirty-fifth invention provides a method for producing a film as recited in ~~claim 2~~  
the second invention, which method comprises forming, on a support, a film by means  
of a coating method from a solution or dispersion containing the poly(carboxylic acid)  
polymer (A) and a solvent, and a solution or dispersion containing the polyvalent metal  
compound (B) and a solvent, the film having at least one layer structure unit including  
the layer (a) formed of the poly(carboxylic acid) polymer (A) and the layer (b) formed of  
the polyvalent metal compound (B), with the layers (a) and (b) being adjacent to each

other; and allowing the thus-formed film to stand in an atmosphere having a relative humidity of at least 20%.

**Please amend the paragraph beginning at page 19, line 23, as follows:**

A thirty-sixth invention provides a method for producing a film as recited in claim 5 the fifth invention, which method comprises forming, on a support, a coating film by means of a coating method from a solution or dispersion of a mixture containing the poly(carboxylic acid) polymer (A), the polyvalent metal compound (B), the volatile base (C), and a solvent; and allowing the thus-formed coating film to stand in an atmosphere having a relative humidity of at least 20%.

**Please amend the paragraph beginning at page 78, line 25, as follows:**

The procedure of Example 1 was repeated, except that the polyacrylic acid (Aron™ A-10H) was replaced by polyacrylic acid (Jurymer™ AC-10SH, product of ~~Nihongousei~~ Nihongousei Co., Ltd., number average molecular weight: 1,000,000, 10 wt.% aqueous solution), to thereby produce a laminate. The laminate was subjected to evaluation in a manner similar to that of Example 1.

**Please amend the paragraph beginning at page 79, line 6, as follows:**

The procedure of Example 1 was repeated, except that the polyacrylic acid (Aron™ A-10H) was replaced by polymethacrylic acid (reagent, product of POLYMER Polyscience, Inc., average molecular weight: 5,000), to thereby produce a laminate. The laminate was subjected to evaluation in a manner similar to that of Example 1.

**Please amend the paragraph beginning at page 79, line 13, as follows:**

The procedure of Example 1 was repeated, except that the polyacrylic acid (Aron<sup>TM</sup> A-10H) was replaced by polymaleic acid (reagent, product of POLYMER Polyscience, Inc., average molecular weight: 5,000), to thereby produce a laminate. The laminate was subjected to evaluation in a manner similar to that of Example 1.

**Please amend the paragraph beginning at page 996, line 26, as follows:**

The procedure of ~~Example 1~~ Example 15 was repeated, except that monomethylamine (reagent, product of Wako Pure Chemical Industries, Ltd.) was employed as a volatile base in place of ammonia employed in Example 15, whereby a laminate was produced and then evaluated. The coating liquid formulation of this Example is as follows.

**Please amend the paragraph beginning at page 117, last line, as follows:**

The procedure of Example 44 was repeated, except that the PET film was replaced by a biaxially stretched nylon 6 film (abbreviated as "ONy") (Emblem<sup>TM</sup> ONBC, product of Unitika Ltd., thickness: 15  $\mu$ m, both side corona treated, percent thermal shrinkage through immersion in hot water at 90°C for 30 seconds: 2%), to thereby produce a laminate. The laminate was subjected to treatment and evaluation in a manner similar to that of ~~Example 33~~ Example 44.

**Please amend the paragraph beginning at page 122, line 12, as follows:**

Polyacrylic acid (PAA) (Aron<sup>TM</sup> [[A-H]] A-10H, product of Toagosei Co., Ltd., number average molecular weight: 200,000, 25 wt.% aqueous solution), serving as a poly(carboxylic acid) polymer, was diluted with distilled water, to thereby prepare a 10 wt.% aqueous solution. The thus-prepared aqueous solution was applied onto a

stretched polyethylene terephthalate film similar to that employed in Example 1 by use of a bar coater (K303 PROOFER™, product of RK PRINT-COAT INSTRUMENT), followed by drying by use of a drier. The resultant coating film layer was found to have a thickness of 0.1 μm. Subsequently, zinc (metal) was deposited onto the polyacrylic acid coating film layer by use of a bell jar-type vacuum deposition apparatus. The resultant zinc deposition layer was found to have a thickness of 0.05 μm. The thus-obtained laminate was allowed to stand for 24 hours in a thermostatic/humidistatic chamber in which the temperature and relative humidity were regulated to 30°C and 80%, respectively, so as to form a PAA zinc salt through migration of Zn ions into the PAA layer (solid-phase reaction), thereby producing a laminate including the PAA zinc salt. The resultant laminate was evaluated in terms of ionization degree, peak ratio ( $A_{1560}/A_{1700}$ ) in an infrared absorption spectrum, oxygen permeability, and solubility in an acid or an alkali by means of the above-described methods.

**Please amend the paragraph beginning at page 129, line 14 from the bottom, as follows:**

Polyacrylic acid (PAA) (Aron™ [[A-H]] A-10H, product of Toagosei Co., Ltd., number average molecular weight: 200,000, 25 wt.% aqueous solution), serving as a poly(carboxylic acid) polymer, was diluted with distilled water, to thereby prepare a 10 wt.% aqueous solution. The thus-prepared aqueous solution was applied onto a stretched polyethylene terephthalate film (PET film) similar to that employed in Example 1 by use of a bar coater (K303 PROOFER™, product of RK PRINT-COAT INSTRUMENT), followed by drying by use of a drier. The resultant coating film layer

was found to have a thickness of 1.0  $\mu\text{m}$ . Subsequently, 10 wt.% aqueous calcium lactate solution was applied onto the coating film by use of the aforementioned bar coater, followed by drying, to thereby yield a PET/PAA/calcium lactate laminate. The dry coating amount of calcium lactate was found to be 2 g/m<sup>2</sup> (1  $\mu\text{m}$ ). The thus-obtained laminate was allowed to stand for 24 hours in a thermostatic/humidistatic chamber in which the temperature and relative humidity were regulated to 30°C and 80%, respectively, so as to form a PAA calcium salt through migration of Ca ions into the PAA layer (solid-phase reaction), thereby producing a laminate including the PAA calcium salt. The resultant laminate was evaluated in terms of ionization degree, peak ratio ( $A_{1560}/A_{1700}$ ) in an infrared absorption spectrum, oxygen permeability, and solubility in an acid or an alkali by means of the above-described methods.

Please delete page 132 containing Table 8 in its entirety and substitute therefore the attached new page:

Table 8

| No.    | I   | II     | *1<br>(°C) | Total thickness<br>of PAA layer and<br>polyvalent metal<br>compound layer<br>( $\mu\text{m}$ ) | Chemical<br>equivalent of<br>polyvalent metal<br>compound | Solubility in acid or alkali |           |         | Ionization<br>degree | Peak<br>ratio | Oxygen permeability (oxygen<br>permeation coefficient)<br>$\text{cm}^3(\text{STP})/\text{m}^2\cdot\text{day}\cdot\text{MPa}$<br>(30°C, 80%RH)<br>$\text{cm}^3(\text{STP})\cdot\mu\text{m}/\text{m}^2\cdot\text{day}\cdot\text{MPa}$<br>(30°C, 80%RH) |
|--------|-----|--------|------------|--|---|------------------------------|-----------|---------|----------------------|---------------|--|
|        |     |        |            |  |   | Acid                         | Neutral   | Alkali  |                      |               |  |
| Ex. 56 | PAA | Calac. | 30         | 2  | 0.94  | Soluble                      | Insoluble | Soluble | 0.8                  | 4.0           | 10 (20)  |
| Ex. 57 | PAA | Znlac. | 30         | 2  | 0.86  | Soluble                      | Insoluble | Soluble | 0.8                  | 4.0           | 10 (20)  |
| Ex. 58 | PAA | CaAc.  | 30         | 2  | 1.1   | Soluble                      | Insoluble | Soluble | 0.8                  | 4.0           | 10 (20)  |

I: Poly(carboxylic-acid) polymer

II: Polyvalent metal compound: Calac.: calcium lactate, Znlac.: zinc lactate, ZnAc.: calcium acrylate

III: Oxygen permeability, unit ( $\text{cm}^3(\text{STP})/\text{m}^2\cdot\text{day}\cdot\text{MPa}$ ) (30°C, 80%RH)

\*1: Carboxylic acid salt formation temperature